

What is claimed:

1. A particulate sealant for forming plugs in selected cells of honeycomb structures and consisting essentially, by weight, of:

about 70 to 90% ceramic blend, the ceramic blend being raw ceramic materials selected to form a composition consisting essentially of in percent by weight about 12 to 16% MgO, about 33 to 38% Al_2O_3 , and about 49 to 54% SiO_2 , which will form cordierite ($2\text{MgO} \cdot 2\text{Al}_2\text{O}_3 \cdot 5\text{SiO}_2$) on firing, and about 10 to 30% binder system comprising a thermoplastic polymer capable of forming a reversible gel or a thermosetting resin.
2. The particulate sealant according to claim 1 wherein the ceramic blend is about 80 to 85 percent by weight and the binder system is about 15 to 20 percent by weight.
3. The particulate sealant according to claim 2 wherein the binder system comprises thermoplastic polymer capable of forming a reversible gel in combination with a low melting wax and a dispersant.
4. The particulate sealant according to claim 3 wherein the binder system has a formulation consisting essentially, by weight, of about 5-20% low melting wax, 1-7% high molecular weight thermoplastic polymer, and 0-5% dispersant.
5. The particulate sealant according to claim 4 wherein the binder system has a formulation consisting essentially, by weight, of about 9.8-10.0% low melting wax, 4.9-5.0% high molecular weight thermoplastic, and 1.7% dispersant.

6. The particulate sealant according to claim 5 wherein the thermoplastic polymer is a tri-block styrene-ethylene/butylene-styrene copolymer, or a butyl methacrylate/acrylic acid copolymer.
7. The particulate sealant according to claim 6 wherein the low melting wax is selected from the group consisting of fatty alcohol, fatty acid, fatty glycol, and fatty glyceride waxes.
8. The particulate sealant according to claim 7 wherein the thermoplastic polymer is tri-block styrene-ethylene/butylene-styrene copolymer and the low melting wax is fatty alcohol.
9. The particulate sealant according to claim 7 wherein the thermoplastic polymer is butyl methacrylate/acrylic acid copolymer and the low melting wax is fatty alcohol.
10. The particulate sealant according to claim 1 wherein the binder system comprises a thermosetting resin.
11. The particulate sealant according to claim 10 wherein the thermosetting resin is selected from the group consisting of epoxy resins, phenolics, diallyl phthalates, unsaturated polyesters and functionalized acrylics.
12. The particulate sealant according to claim 11 wherein the thermosetting resin is epoxy resin.
13. The particulate sealant according to claim 12 wherein the epoxy resin is combined with a crosslinking agent, and a dispersant.

14. A material in powder form for sealing the end of selected cells of honeycomb structures and consisting essentially, by weight, of:

about 78 to 84% ceramic blend, the ceramic blend being raw ceramic materials selected to form a composition consisting essentially of in percent by weight about 12 to 16% MgO, about 33 to 38% Al_2O_3 , and about 49 to 54% SiO_2 , which will form cordierite ($2\text{MgO} \cdot 2\text{Al}_2\text{O}_3 \cdot 5\text{SiO}_2$) on firing, and about 16 to 28% binder system, the binder consisting essentially, by weight, of about 9.5-15.0% low melting wax, about 5% thermoplastic polymer, and about 2 dispersant.

15. The material according to claim 14 wherein the low melting wax is selected from the group consisting of fatty alcohol, fatty acid, fatty glycol, and fatty glyceride waxes.

16. The particulate sealant according to claim 15 wherein the thermoplastic is tri-block styrene-ethylene/butylene-styrene copolymer and the low melting wax is fatty alcohol.